

ABSTRACT

A method and apparatus is shown for implementing magnetostrictive sensor techniques for the nondestructive evaluation of pipes or tubes. A magnetostrictive sensor generates guided waves in a pipe or tube, which waves travel therethrough in a direction parallel to the longitudinal axis of the pipe or tube. This is achieved by using a magnetized ferromagnetic strip being pressed circumferentially against the pipe or tube. For improved efficiency, the strip may be made from an iron-cobalt alloy. The guided waves are generated in the strip and coupled to the pipe or tube and propagate along the length of said pipe or tube. For detection, the guided waves in said pipe or tube are coupled to the thin ferromagnetic strip and are detected by receiving MsS coils. Reflected guided waves may represent defects in the pipe or tube.

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